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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,326	03/24/2004	Shinya Nagano	3273-0188PUS1	4009
2292	7590	11/18/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			HAMPTON HIGHTOWER, PATRICIA	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/807,326

Applicant(s)

NAGANO ET AL.

Examiner

Patricia Hightower

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

***Response to Amendment***

In view of the applicants' response filed August 26, 2005, the rejection of the claims under 35 USC 102(b) as anticipated by Feinstein et al (USP 4,142,036) because it does not teach as claimed the aromatic polyamine represented by Formula (2), which recites  $R^1$  and  $R^2$  are each a substituent bound to Ring Z, may be the same or different from each other and each are an amino group, a mono-substituted amino group, a hydroxyl group or a mercapto group; the nitrogen-containing ring is formed as a result of the reaction between carboxyl group in adamantane polycarboxylic acid, an amino group and  $R^1$  (or  $R^2$ ) in Ring Z; and a material made from the polymer can form a highly crosslinked polymer film having crosslinks in three directions with the adamantane skeleton as vertexes (crosslinking points) by using an adamantane polycarboxylic acid having three functional groups, said material for the dielectric film exhibits satisfactorily low relative dielectric constant obtained by having an adamantane ring, an aromatic ring and an azole ring or 6-membered nitrogen-containing ring and these rings provide a multitude of uniformly dispersed molecular-scale voids in the film.

However, the claims are subject to a new ground of rejection under 35 USC 102(a,e) as being unpatentable over Aoi (USP 6,903,006 newly cited) or Aoi (US 2002/0034873 A1 newly cited and of record).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are newly rejected under 35 U.S.C. 102(a,e) as being anticipated by

Aoi (US 2002/0034873 newly cited and of record) and (USP 6,903,006 newly cited).

Aoi (US 2002/0034873 newly cited and of record) discloses an interlayer dielectric film made of a three-dimensionally polymerized polymer (Fig. 6A) is formed by polymerizing; first crosslinking molecules having three or more sets of functional groups in one molecules having three or more sets of functional groups in one molecule providing a three-dimensional structure and a second crosslinking molecule having two sets of functional groups in one molecule providing a two-dimensional structure Fig. 6A, the polymer is prepared by polymerizing 1,3,5,7-tetrakis(4-carboxylatophenyl)adamantane polycarboxylic acid and a polyamine (tetraaminobenzene; the tetraaminobenzene was used as the second crosslinking molecule to form the benzimidazole skeleton (polybenzimidazole). Alternatively, dihydroxydiaminobenzene may be used in place of tetraaminobenzene, to form a benzoxazole skeleton (polybenzoxazole). See abstract; page 7, paragraph [0122] page 6, paragraph [0115]; example 2. Fig. 6A.

Aoi (USP 6,903,006 newly cited) Aoi (US 2002/0034873 newly cited and of record) discloses an interlayer dielectric film made of a three-dimensionally polymerized polymer (Fig. 6A) is formed by polymerizing; first crosslinking molecules having three or more sets of functional groups in one molecules having three or more sets of functional groups in one molecule providing a three-dimensional structure and a second crosslinking molecule having two sets of functional groups in one molecule providing a two-dimensional structure Fig. 6A, the polymer is prepared by polymerizing 1,3,5,7-tetrakis(4-carboxylatophenyl)adamantane polycarboxylic acid and a polyamine (tetraaminobenzene; the tetraaminobenzene was used as the second crosslinking molecule to form the benzimidazole skeleton (polybenzimidazole). Alternatively, dihydroxydiaminobenzene may be used in place of tetraaminobenzene, to form a benzoxazole skeleton (polybenzoxazole). See abstract; col. 11, lines 25-34; example 2. Fig. 6A.

***Obviousness-type Double Patenting Rejection***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 10/807,426. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application and the copending application S.N. 10/807,426 are claiming overlapping subject matter that is viewed as not being patentably distinct. The instant application and the copending application are claiming a material for dielectric films that is a polymerizable composition comprising dissolving in an organic solvent an adamantane polycarboxylic acid derivative denoted by the formula (1), an aromatic polyamine denoted by the formula (2); a polymer that is the polymerized product of the polymerizable composition comprising the adamantane polycarboxylic acid denoted by formula (1) and the aromatic polyamine denoted by the formula (2) dissolved in an organic solvent and the dielectric-film prepared from the polymer formed from an adamantane polycarboxylic acid denoted by the formula (1) and the aromatic polyamine denoted by the formula (2);

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wherein the dielectric film has a 5% weight loss temperature of 500°C or higher. The instant application is claiming a narrower variation, which is encompassed by the broader claimed invention of the copending application. In such an instance, it is viewed that one set of claims cannot be infringed without literally infringing the other set of claims. Therefore, an obviousness-type double patenting rejection is proper.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Daicel Chem Ind. Ltd., is cited to show the state of the art of adamantane derivatives and process of preparing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Hightower whose telephone number is (571) 272-1073. The examiner can normally be reached on M-F from 9:30 A.M. - 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



P. Hampton Hightower  
Primary Examiner  
Art Unit 1711

P. Hightower:ph  
November 12, 2005